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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/773,851 | 02/04/2004 | Amir S. Mikhail | D-1600 | 7169 |
| 49147 | 7590 | 09/07/2005 | EXAMINER | |
| OWEN L. LAMB P.O. BOX 386 PRESCOTT, AZ 86302-0386 | | | CUEVAS, PEDRO J | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2834 | |

DATE MAILED: 09/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

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|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/773,851 | MIKHAIL ET AL. | |
| | Examiner | Art Unit | |
| | Pedro J. Cuevas | 2834 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/17/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 8-15, 21-23, and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,017,857 to Fox.

Fox clearly teaches the construction of a circuit and method for voltage regulation of electric power sources comprising:

a main input shaft turned by a source of energy (prime mover);

a three phase synchronous generator (10) operatively connected to said main input shaft, an output of said synchronous generator being AC electrical power;

a passive rectifier (18), comprising a plurality (6) of diodes (Figure 1) that convert AC electrical power into DC electrical power, connected to said output of said synchronous generator, an output of said passive rectifier being DC electrical power;

an inverter (26) connected to said output of said passive rectifier, an output of said inverter being AC electrical power;

a controller (36) that controls generator torque by regulating the current in said DC electrical power;

a band pass filter (Figure 2B) for said voltage measurement that is tuned to measure vibrations in mechanical portions of said electric power-generating device at a

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predetermined resonant frequency and wherein said controller provides a generator torque signal that cancels and dampens vibrations; and

a controller (Figure 2A) that measures vibrations, by measuring the voltage of said DC electrical power, in mechanical portions of said electric power-generating device and controls generator torque to actively dampen said vibrations;

wherein the voltage of said DC electrical power is measured and used as an input to said controller (column 2, lines 59-65).

3. With regards to claim 28, Fox discloses a method of generating electric power comprising steps of:

A. converting fluid-flow power into mechanical power;

B. utilizing a plurality of generators to convert said mechanical power into AC electrical power;

C. rectifying outputs of said generators to thereby convert said AC electrical power of said generators into DC electrical power; and

D. inverting said DC electrical power to thereby convert said DC electrical power to AC electrical power.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 2-7, 16-18, 24-25 and 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,017,857 to Fox in view of U.S. Patent No. 5,083,039 A to Richardson et al. (prior art document submitted by applicant).

Fox disclose the construction of a circuit and method for voltage regulation of electric power sources as disclosed above, further comprising:

a set of power cables (20, 22) that conduct DC electrical power.

However, it fails to disclose:

a plurality of synchronous generators operatively connected to a main input shaft;

a controller that brings each generator of said plurality of synchronous generators online sequentially in the event of low energy conditions of said source of energy to improve system efficiency at low power.

Richardson et al. teach the construction of a variable speed wind turbine comprising:

a plurality of synchronous generators (16, 18) operatively connected to said main input shaft;

a controller (54) that brings each generator of said plurality of synchronous generators online sequentially in the event of low energy conditions of said source of energy to improve system efficiency at low power;

a blade (12) for converting fluid-flow power into mechanical power;

for the purpose of building a high capacity wind turbine while using readily available generators (column 5, lines 26-30).

It would have been obvious to one skilled in the art at the time the invention was made to use the circuit and method for voltage regulation of electric power sources disclosed by Fox on

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the variable speed wind turbine disclosed by Richardson et al. for the purpose of building a high capacity wind turbine while using readily available generators.

6. With regards to claims 4 and 18, it should be emphasized that “apparatus claims must be structurally distinguishable from the prior art.” MPEP 2114. In re Danly, 263 F. 2d 844, 847, 120 USPQ 528, 531 (CCPA 1959) it was held that apparatus claims must be distinguished from prior art in terms of structure rather than function. In Hewlett-Packard Co. v Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990), the court held that: “Apparatus claims cover what a device is, not what it does” (emphases in original). To emphasize the point further, the court added: “An invention need not operate differently than the prior art to be patentable, but need only be different” (emphases in original).

7. With regards to claim 5, it would have been an obvious matter of design choice to use a set of power cables to conduct DC electrical power from the top of said tower to the bottom of said tower, since the applicant has not disclosed that longer power cables solve any stated problem or is for any particular purpose and it appears that the invention would perform equally well with short power cables.

8. With regards to claims 29-31, Fox in view of Richardson et al. disclose a method of generating electric power comprising the step of:

E. bringing each of said generators online sequentially in low fluid-flow conditions to improve system efficiency at low power , such that each generator receives substantially similar utilization.

9. Claims 19-20, 26-27, and 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,017,857 to Fox in view of U.S. Patent No. 5,083,039 A to

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Richardson et al. (prior art document submitted by applicant) as applied to claims 2-7 and 16-18 above, and further in view of U.S. Patent No. 6,724,097 B1 to Wobben.

Fox in view of Richardson et al. disclose the construction of a circuit and method for voltage regulation of variable speed wind turbines and electric power sources as disclosed above.

However, it fails to disclose a fluid flow farm.

Wobben teach the construction of a method for operating a wind farm comprising:

a plurality of fluid-flow turbines (1, 2, 3) each of which converts fluid-flow power into AC electrical power at substantially unity power factor;

an electrical collection system (Data processing apparatus) that electrically connects each of said fluid-flow turbines to a substation wherein said electrical collection system is sized for operation of said fluid-flow turbines at substantially unity power factor; and

a dynamically adjustable power factor controller (Figure 1) at said substation for adjusting the power factor of the aggregate output of said fluid-flow farm; for the purpose of providing a wind park equipped with a total power output which is higher than the maximum possible network feed-in power output (column 1, lines 35-38).

It would have been obvious to one skilled in the art at the time the invention was made to use the circuit and method for voltage regulation of variable speed wind turbines and electric power sources disclosed by Fox in view of Richardson et al. on the wind farm disclosed by Wobben for the purpose of providing a wind park equipped with a total power output which is higher than the maximum possible network feed-in power output.

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10. With regards to claims 32-34, Fox in view of Richardson et al. in view of Wobben disclose a method of generating electric power comprising steps of:

D. electrically connecting each of said fluid-flow turbines via an electrical collection system to a substation wherein said electrical collection system is sized for operation of said fluid-flow turbines at substantially unity power factor;

E. dynamically adjusting the power factor of the aggregate output of said plurality of fluid-flow turbines at said substation; and

F. conducting DC electrical power electrical power from said top of one tower to said bottom of said one tower prior to said step C of inverting said DC electrical power of each said synchronous generators of a turbine;

wherein:

said step A of providing a plurality of fluid-flow turbines includes the step of providing a plurality of towers with each one of said turbines on top of one of said towers;

said step B of rectifying outputs of each said generators is performed at said top of said one tower; and

said step C of inverting said DC electrical power of each said synchronous generators of a turbine to thereby convert said DC electrical power to AC electrical power is performed at a bottom of said one tower.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pedro J. Cuevas whose telephone number is (571) 272-2021. The examiner can normally be reached on M-F from 8:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Pedro J. Cuevas
August 29, 2005



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